

## Abstract of the Disclosure:

A magnetic gap is provided between permanent magnet  
of a rotor and an auxiliary magnetic pole portion which  
is adjacently arranged to the permanent magnet to a  
peripheral direction. A change in a magnetic flux  
density distribution of a surface of the rotor is  
performed moderately and a cogging torque and a torque  
pulsation are restrained. By obtaining a reluctance  
torque according to the auxiliary magnetic pole, a  
permanent magnet electric rotating machine in which the  
cogging torque and the torque pulsation are restrained  
can be obtained and further an electromotive vehicle  
having the permanent magnet electric rotating machine  
can be provided.